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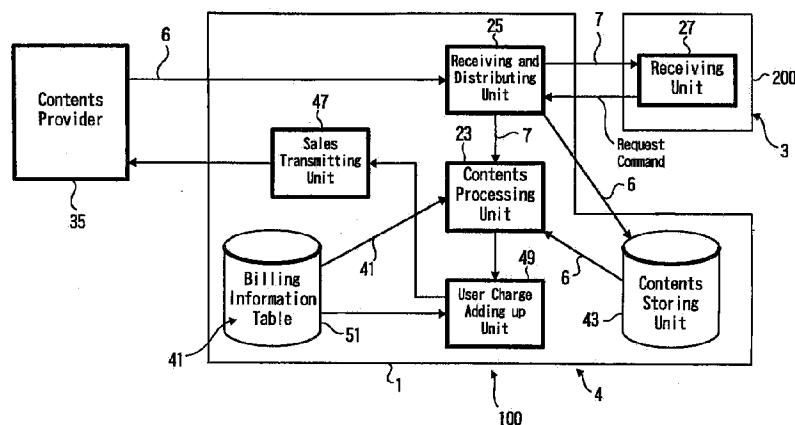
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(54) Information distributing apparatus and information distributing method, information receiving apparatus and information receiving method as well as information receiving and distributing method

(57) An information distributing apparatus for billing and distributing information is comprised of an adding means for adding a value standard to the above-mentioned information based on a predetermined standard, a billing means for carrying out billing based on the above-mentioned value standard of the above-mentioned information and a distributing means for distributing the above-mentioned information billed by the above-mentioned billing means 23, whereby an infor-

mation distributing apparatus and an information distributing method, an information receiving apparatus and an information receiving method as well as an information receiving and distributing method, which are capable of carrying out billing of a side to which information are provided based on a value standard of the provided information, are provided.

FIG. 6



**Description****BACKGROUND OF THE INVENTION****Field of the Invention**

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**[0001]** The present invention relates to an information distribution apparatus and an information distribution method with respect to a billing method at a time of distributing information, an information receiving apparatus and an information receiving method, and an information receiving and distributing method.

**Description of the Related Art**

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**[0002]** In recent years, various kinds of information (hereafter, referred to as contents) are in circulation with the advance of the multimedia industry. These contents have come to be provided by way of, for example, a communications satellite, radio communication, cable communication such as CATV (the cable television) and an information distribution service (hereafter, referred to as service) using the internet and the like. With the service, a so-called predetermined billing has been carried out corresponding to the provided contents. With a conventional service, music information and image information as part of audio information and video information are transmitted to a user on the receiving side (hereafter, referred to as user) with a predetermined format. At this time, although there has been a service whereby to reflect a difference in transmission systems of contents data as to whether the contents are transmitted by an analog system or a digital system on the amount of billing, sound quality, image quality and genre (classification) of these music information and image information have never been reflected on the above-mentioned amount of billing and as a result, the amount to be billed has been fixed.

**[0003]** However, a preference of the user is diverse, which means that there is a case where a user does not care about a quality of some contents, but wants them to be provided cheaply, or a case where the user wants to be provided the highest quality of other contents however expensive they are. Therefore, with the conventional service, it is impossible to answer these requests under the present circumstances.

**SUMMARY OF THE INVENTION**

**[0004]** Therefore, an object of the present invention is to solve the above-mentioned problems and propose an information distribution apparatus and an information distribution method, an information receiving apparatus and an information receiving method, and an information receiving and distributing method which are capable of carrying out the billing of the side to which information is provided based on a value standard for the provided information.

**[0005]** According to an aspect of the present invention, there is provided an information distributing apparatus for billing and distributing information, which is characterized by comprising an adding means for adding a value standard to said information based on a predetermined standard, a billing means for carrying out a billing based on said value standard for said information, and a distributing means for distributing said information billed by said billing means.

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**[0006]** According to the present invention, in the information distributing apparatus, the adding means adds the value standard to the information based on the predetermined standards. The value standard added to the information by the adding means is referred to at a time of billing the information distributed by the distributing means. The billing means bills the information based on the value standard.

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**BRIEF DESCRIPTION OF THE PREFERRED EMBODIMENTS**

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**[0007]**

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FIG. 1 is an image diagram of an information receiving and distributing system including an information distributing apparatus as a favorable embodiment of the present invention;

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FIG. 2 is a diagram showing an example of an arrangement of the information receiving and distributing system in FIG. 1;

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FIG. 3 is a diagram showing an example of an arrangement of the information receiving and distributing system in FIG. 1;

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FIG. 4 is a diagram of an arrangement of hardware showing a concrete example of the information distributing apparatus in FIG. 1;

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FIG. 5 is a block diagram showing an example of a simplified electric arrangement of a computer in FIG. 4;

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FIG. 6 is a diagram of an arrangement of software showing an example of a concrete processing of the information receiving and distributing system in FIG. 1;

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FIG. 7 is a diagram showing an example of an arrangement of contents distributing data and a billing information table in FIG. 6;

FIG. 8 is an image diagram showing an adapted example of the information receiving and distributing system including the information distributing apparatus in FIG. 1;

FIG. 9 is a block diagram showing an example of a functional arrangement of the information receiving apparatus in FIG. 6; and

FIG. 10 is a block diagram of a modified example of the functional arrangement of the information receiving apparatus in FIG. 9.

## DESCRIPTION OF THE PREFERRED EMBODIMENTS

[0008] Hereafter, suitable embodiments of the present invention will be explained with reference to attached drawings.

[0009] Meanwhile, the embodiments to be explained in the following are, since they are suitable concrete examples of the present invention, attached with various kinds of technologically suitable limitations, but the scope of the present invention is not limited to these embodiments unless there are any statements to the effect that the following explanations particularly limit the present invention.

[0010] In the following explanations, "a value standard" means a high and a low of a value for using information which is distinguished by quality and class and "quality" is, in terms of image information, a degree of definition of image and in terms of audio information, goodness of sounds at a time of reproduction, and "classes (value, genre)" indicate, for example, in terms of music information, ones such as classic music, popular music and the like and in terms of image information, movies, CG (Computer Graphics), a still image and the like and "contents (information)" indicate substance, contents and accommodated information of music information and image information as part of audio information and video information respectively. Hereafter, the contents will be explained with music information mainly as one example.

[0011] FIG. 1 is an imaginary diagram of an information receiving and distributing system including an information distributing apparatus as a suitable embodiment of the present invention.

[0012] An information receiving and distributing system 100 (information receiving and distributing apparatus) is comprised of, for example, a contents provider 35, a contents distributing service dealer 4 and a user 33. The information receiving and distributing system 100 is a system for obtaining music from one (the contents provider 35 in FIG. 1) who wants to provide the music and the like, and widely distributing the music to a third party (a user 33 in FIG. 1).

[0013] The above-mentioned contents provider 35 is one and the like who, for example, compose music and want to provide the music composed by themselves to the third party. The contents provider 35 registers contents data 6 (audio information and video information) such as, for example, the music and the like composed by himself with the contents distributing dealer 4.

[0014] The contents distributing service dealer 4 receives the music and the like which the contents provider 35 wants to register. The contents distributing service dealer 4 provides a desired piece of music to a user 33 who wants to listen to the music from among a lot of accumulated music and the like. The contents distributing service dealer 4 distributes information by, for example, an information distributing apparatus 1 (a part

of the information receiving and distributing apparatus) to be explained later in FIG. 4 to an information receiving apparatus 200 to be explained later, which the user 33 operates.

5 [0015] When information on music and the like are provided by the contents distributing service dealer 4, such a system may be used which uses cable communication such as a network 39 as in FIG. 2 or radio communication as in FIG. 3, alternatively a combination of 10 these two. As an example of using the cable communication, there is a mode such as utilizing the internet as one example of the network 39 in FIG. 2, CATV (Cable Television, however, this is a case of distributing the image information and the like), ATM (Asynchronous

15 Transfer Mode) communication and the like, and as an example of utilizing radio communications, there is a mode such as using a communication satellite 10 in FIG. 3, a ground wave broadcast and the like. Meanwhile, needless to say, the above-mentioned modes 20 may be combined. In the following explanation, an example of an arrangement of the information distributing and receiving system 100 will be explained on condition that the internet is used as, for example, the network 39.

25 [0016] FIG. 4 is a block diagram of an arrangement of hardware showing a concrete example of an arrangement of the information distributing apparatus in FIG. 1. Meanwhile, since an information distributing apparatus 1 is a computer (so-called personal computer is also preferable) capable of, for example, high speed processing and since an information receiving apparatus 200 is a computer such as, for example, a personal computer, a portable information terminal and the like, or its one kind, they are respectively deemed to have 30 nearly similar arrangements. An example of the arrangement of the information receiving apparatus 200 will be explained later.

[0017] The information distributing apparatus 1 is, as 35 explained above, for example, a computer 21. The computer 21 is provided with an environment (for example, a network substrate, a network cable, other drive software and the like) for connecting to the network 39 to be not graphically shown, and comprises a main body 21a having a control unit and the like such as a central processing unit (CPU) and the like, a disc apparatus 13 provided in the main body 21a, a pointing device 3, a displaying unit 5 and a keyboard 11.

[0018] The computer 21 is provided with the disc apparatus 13 capable of at least reading out information from, for example, an information recording medium 15. The information recording medium 15 is, for example, a compact disc (CD-ROM), a flexible disc (floppy disc) and the like.

[0019] FIG. 5 is a block diagram showing an example 50 of a simplified electric arrangement of the computer in FIG. 4.

[0020] The computer 21 comprises a control unit 9, the displaying unit 5, a memory unit 17, the disc appara-

tus 13 and a an outside memory unit 19 and preferably, the pointing device 3, and the key board 11.

**[0021]** The above-mentioned control unit 9 is connected with, for example, the displaying unit 5, the memory unit 17, the disc apparatus 13 and the outside memory unit 19, and preferably with the pointing device 3 and the key board 11. The control unit 9 is one for controlling each of the above-mentioned connected blocks. The control unit 9 stores soft wear in such as the outside memory unit 19, for example, a hard disc and the like and carries our the soft wear by making the memory unit 17 such as, for example, RAM (Random Access Memory) or the like as an operating area when a necessity arises.

**[0022]** The above-mentioned displaying unit 5 is a displaying device of, for example, a CRT (Cathode Ray Tube) and a liquid crystal display. The above-mentioned pointing device 3 is an operating means, for example, like a mouse of the computer 21.

**[0023]** The above-mentioned key board 11 is an operating unit of the computer 21, provided for operation and so on of the computer 21 in stead of the pointing device 3 for an unaccustomed learner of, for example, the pointing device 3. Meanwhile, in the information distributing apparatus 1 (and the information receiving apparatus 200), since the distribution of information is automatically carried out, the key board 11 and the pointing device 3 are not necessary in an ordinary operation.

**[0024]** FIG. 6 is a diagram of an arrangement of the soft wear showing a concrete example of processing by the information receiving and distributing system in FIG. 1.

**[0025]** The contents provider 35, in order to register with the contents distributing service dealer 4 to provide, for example, the music he has composed to a third party, registers the contents data 6 with the information distributing apparatus 1 provided at the contents distributing service dealer 4.

**[0026]** The information distributing apparatus 1 comprises a receiving and distributing unit 25 (distributing means), a contents storing unit 43, a billing information table 51, a contents processing unit 23 (a adding means, a billing means), a usage rate adding up unit 49 and a sales transmitting unit 47.

**[0027]** The above-mentioned receiving and distributing unit 25 receives the contents data 6 provided by the contents provider 35 and stores them in the outside memory unit 19 of FIG. 5, which is, for example, a hard disc. The contents data 6 are, for example, when they are music information, stored in data formats such as a CD-DA (Compact Disc-Digital Audio) format, an ATRAC (Adaptive Transform Acoustic Coding) format (an ATRAC 2 can be employed otherwise), a MIDI (Musical Instrument Digital Interface) format, a WAV (WAVE) file and the like. The contents data 6 are, for example, when they are the image information, stored in data formats like, for example, an MPGE 2 (Moving Picture Experts

Group 2) format (MPEG 1, 4, 7 can be employed otherwise), a JPEG (Joint Photographic Experts Group) format, a BMP (BitMap) format, a GIF (Graphic Interchange Format) and the like.

**[0028]** The above-mentioned billing information table 51, when the contents processing unit 23 distributes information to the information receiving apparatus 200, which will be explained later, stores billing information in the distributed contents data 6 as basic data for carrying out the billing commensurate with its value. The billing information data 21 comprises, for example, as shown in FIG. 7 (B), a quality divisions table and, as shown in FIG. 7 (C), a contents classification table.

**[0029]** A quality divisions table 31 in FIG. 7 (B) is a table to stipulate a division (a value standard) in terms of the quality of the information distributed to, for example, the information receiving apparatus 200. The quality divisions table 31 has data on a rank, quality and a rate, for example, of every data. Here, as one example of the "quality", for example, in a case of voice information, a system based on a compression rate of the contents 6 (to show data about to what extent original data is compressed), a transmission speed , a highest reproduction frequency and the number of bits per sample bit is cited and in a case of, for example, image information, a system based on the compression rate of the contents 6 (to show data about to what extent original data is compressed), the transmission speed, resolution/the number of pixels and the like is cited.

**[0030]** That is, since the not-much compressed (for example, in FIG. 7 (B), not compressed ) contents data 6 can reproduce the sounds as they are, the rate is set expensive (when the value standard is high, the usage rate is expensive) while since much-compressed (for example, in FIG. 7 (B), compressed-by-10%) contents data 6 can not be correctly reproduced, the rate is set inexpensive (when the value standard is low, the usage rate is made inexpensive). Therefore, the quality classifications table 31 stores billing information in order to carry out the billing in accordance with the quality of the distributed contents data 6. Meanwhile, the standards for the classifications are not limited to the degrees of the compression, but various standards such as a compression system and the like can be employed. Generally, when the compression systems are the same, the degree of the compression corresponds to the value standard, but when the compression systems are different, even when the degree of the compression is large, there is a case where the value standard becomes high, so it is necessary to pay attention to adopting the standard.

**[0031]** As one example of the quality classifications, in a case of music information, there are a compact disc sound quality level, an FM (Frequency Modulation) radio broadcast sound quality level, a mini-disc sound quality level, a cassette tape sound quality level and the like for every sound quality. In a case of image information, for example, in a reproduced video image, there

are a DVD (Digital Video Disc) image quality level, an S-VHS (Super-Video Home System) image quality level, a VHS (Video Home System) image quality level or the like and for example, in a case of Television broadcast image quality, there are a high-vision image quality level, an NTSC (National Television System Committee) image quality level and the like. That is, with the information distributing apparatus 1, although the contents data 6 are the same, there is a case in which the billing becomes different depending on the quality. The information distributing apparatus 1 has the user make a selection from a plurality of the qualities, thereby carrying out the billing on the receipt of the contents data 6.

[0032] The information distributing apparatus 1, at a time of distributing, for example, digitalized contents data 6, may preferably bill and distribute based on a bit rate (the transmission speed in a case of real-time reproduction (one-fold speed)).

[0033] The contents classifications table 32 in FIG. 7 (C) is a table which prescribes a division (value standard) of a class of the contents data 6 distributed to, for example, the information receiving apparatus 200. The contents classification table 32 stores the billing information for carrying out different billings depending on the contents of the contents data 6 distributed to the information receiving apparatus 200. That is, the contents classification table 32 stores divisions of contents classification codes and the contents classifications which fit into them, for example, in a case of music information, classic music, popular music or music of other genres and the like while in a case of image information, movies, divisions of CG (Computer graphics), a still image and the like.

[0034] The above-mentioned contents processing unit 23 processes the contents data 6 in response to a demand from, for example, the information receiving apparatus 200 to produce contents distributing data 7 (information) and transmits the contents distributing data 7 to the information receiving apparatus 200 as one example of a distributing end. The contents distribution data 7 is a data with a format, for example, in FIG. 7 (A).

[0035] The contents distributing data 7 is comprised of a contents classification C and quality Q as, for example, a header, the contents data 6 demanded by the information receiving apparatus 200 and billing information 41.

[0036] The contents classification C can store 4 bits code. The contents classification Code of the contents classifications table 32 is written into the contents classification C based on a class of the contents of the contents data 6 by the contents processing unit 23.

[0037] The quality Q can store, for example, a 4 bits code. A code showing a rank of the quality division table 31 in FIG. 7 (B) is written into the quality Q based on the quality of the contents of the contents data 6 by the contents processing unit 23. Therefore, the information receiving apparatus 200 has only to reproduce the con-

tents data 6 by referring to the header.

[0038] Therefore, on the information receiving apparatus 200 side, even when the contents data 6 are various kinds of data, reproduction is carried out in accordance with the information of the header. Also, the information receiving apparatus 200 can have a prior knowledge of how much a bill will be charged by referring to the header.

[0039] The contents data 6 are data on, for example, the music information, the image information (moving images, still images, CG, photograph images or the like) and the like.

[0040] The billing information such as an amount of money and the like the information receiving apparatus 200 which receives the contents distributing data 7 has to pay in accordance with the contents classification C and the quality Q of contents data b is written into the billing information 41.

[0041] The above-mentioned charge adding up unit 49 is a processing unit for adding up a charge (sales in the case of the contents provider 35 in FIG. 1) of the contents data 6 for every information receiving apparatus 200 (otherwise, every contents provider 5 in FIG. 1). The charge adding up unit 49 has the sales transmitting unit 47 transmit a calculated usage rate for every information receiving apparatus 200 to the contents provider 35 by referring to the billing information table 51. That is, the contents provider 35 receives an amount of money for his sales to the contents data 6.

[0042] The information receiving apparatus 200 has a receiving unit 27 for receiving the contents distributing data 7 distributed from the information distributing apparatus 1. The receiving unit 27, at a time of receiving the contents distributing data 7, makes a demand in order to obtain desired contents. The information receiving apparatus 200 will be explained later.

[0043] The information distributing system 100 has the above-mentioned arrangement and next, its action (including a information distributing method) will be explained with reference to FIG. 1 to FIG. 7.

[0044] The user 33 is one who operates, for example, the information receiving apparatus 200. The user 33 feels inclined to listen to a desired piece of music and retrieves the music information registered in the information distributing apparatus 1. Various music information is registered in the information distributing apparatus 1. The music information is registered in the information distributing apparatus 1 by the contents provider 35 who makes, for example, the composition of music either a hobby or an occupation. The contents provider 35 demands the charge in exchange for a third party listening to the music he composed.

[0045] The user 33 demands a desired piece of music from the information distributing apparatus 1. To the demand, in the information distributing apparatus 1, the above-mentioned desired music information (hereafter, referred to as contents data 6) stored in the contents storing unit 43 is read by the contents processing unit

23. At this time, when the contents data 6 was registered in the information distributing apparatus 1 by the contents provider 35, the contents classification C of the contents data 6 may have been simultaneously registered. Meanwhile, the contents classification C may be later registered by the information distributing apparatus 1 side (the contents distribution service dealer 4 in FIG. 1).

[0046] The contents processing unit 23, depending on the above-mentioned contents classification C, conditions and the like (for example, the transmission speed) at a time of distributing from the information distributing apparatus 1, decides the quality Q of the contents data 6 and produces the contents distributing data 7 by adding the contents classification C, the quality Q and the billing information 41 like FIG. 7 (A) to the contents data 6. The receiving and distributing unit 25 distributes the contents distributing data 7 to the information receiving apparatus 200. At this time, as a means for specifying the information distributing apparatus 200 of a distributing end, the receiving and distributing unit 25, when communication is carried out with, for example, a TCP/an IP (Transmission Control Protocol/Internet Protocol) as protocols, distributes an IP address and the like of the information receiving apparatus 200 as identifiers.

[0047] On the other hand, the contents processing unit 23, when the contents data 6 are distributed to the information receiving apparatus 200, notifies the usage rate adding up unit 19 of the fact. The usage rate adding up unit 19 charges the information receiving apparatus 200, or a receiving end of the contents distributing data 7 a usage rate in accordance with the value standard through, for example, the sales transmitting unit 47 in every predetermined period of time and pays the contents provider 35, or the provider of the contents data 6 for the sales in every predetermined period of time.

[0048] FIG. 8 is an image diagram showing an application example of the information receiving and distributing system apparatus including the above-mentioned information distributing apparatus.

[0049] In the information receiving and distributing system 100a in FIG. 8, an information receiving apparatus 200a (shop 3a) is deployed at, for example, a shop such as a convenience store or the like. In the information receiving apparatus 200a is provided a slot (recording apparatus) capable of writing information in a memory like PROMs (Programmable Read Only Memory) such as, for example, a CD-R (Compact Disc-Recordable), a minidisc, a RAM, a flash memory and the like and an information recording media (hereafter, referred to as a recording media) like a magnetic tape.

[0050] At the shop 3a, there is the contents data 6 distributed from the information distributing apparatus 1 and the billing can be changed depending on the contents data 6 which an arbitrary user takes possession of. For a user who has, for example, the minidisc as recording media, it follows that the contents data 6 is

5 compressed and recorded by the information receiving apparatus 200a depending on the recording media (information recording media) and the quality is decided. Therefore, the billing information is decided at this point. When the recording media is, for example, the CD-R (Compact Disc-Recordable), the contents data 6 is recorded by way of a CD-DA (Compact Disc-Digital Audio) format without being compressed, and when it is the minidisc, it is recorded by way of the ATRAC format and when it is the RAM (or the PROM), it is recorded by way of the ATRAC2 format. Also, when the recording medium is the magnetic tape, the contents data 6 is put into an analog representation and recorded in the magnetic tape.

10 [0051] When the contents data 6 which are distributed by these applied examples are received by the information receiving apparatus 200 and recorded in arbitrary recording medium, the information receiving apparatus 200 is billed depending on the recording media. The user can obtain desired information in various recording media which are possessed by him. The information receiving apparatus 200 will be explained in detail in the following.

15 [0052] It is conceivable that the information receiving apparatus 200 has such a form which has, for example, the following functions.

20 [0053] FIG. 9 is a block diagram showing an example of a functional arrangement of the information receiving apparatus in FIG. 6.

25 [0054] The information receiving apparatus 200 comprises, for example, a recording medium selecting circuit 50 (recording medium selecting means), an ATRAC encoder 51, an ATRAC 2 encoder 52, a D/A (Digital to Analog) converter 53 (hereafter, abbreviated as D/A), a recording apparatus 55 (recording means), a display 56, a key input unit 57 and a billing coping processing circuit 54 (billing coping means).

30 [0055] The information receiving apparatus 200 is one for receiving the contents data 6 with, for example, CD-DA (Compact Disc-Digital Audio) format.

35 [0056] The above-mentioned recording medium selecting circuit 50 is one for selecting which one of the information recording medium to record the recorded contents data 6 in. As the information receiving medium for recording the received contents data 6, it is possible to employ, for example, the CD-R, the minidisc (MD), the RAM or the magnetic tape. In the CD-R is directly recorded the contents data 6 with, for example, the CD-DA format and in the minidisc is recorded the contents data 6 which is converted into a predetermined format by, for example, the ATRAC encoder 51 and in the RAM is recorded the contents data 6 which is converted to a predetermined format by, for example, the ATRAC2 encoder 52 and in the magnetic tape is recorded analog signal into which digital signal is converted by the D/A 53.

40 [0057] When a desired information recording media is selected by the recording media selecting circuit 50, in a

case of the contents data 6 being on the music information, an amount of money per one piece of music such as [200yen], [100yen], [100yen], and [50yen], for example, for every recording medium is each displayed on the display 56. Also, in the information receiving apparatus 200 ordinarily in the vicinity of the display 56, and at positions corresponding to these displays of the amounts of money, there are provided, as the key input unit 57, for example, a CD button 57a, an MD button 57a, a RAM button 57c and a tape button 57d, respectively. Therefore, the user can select the desired information recording medium and record the above-mentioned contents data 6 in the information recording media.

[0058] The above-mentioned billing coping process circuit 54 displays the amount of money per the above-mentioned one piece of music in the display 56 based on the billing information 41 from the contents distributing service dealer 4, carries out the billing process in accordance with the information recording medium selected by the key input unit 57 and pays the usage rate 12 to the contents distributing service dealer 4.

[0059] According to the above-mentioned information receiving apparatus 200, the amount of money to be billed can be made different depending on the information recording medium for recording the contents data 6.

[0060] FIG. 10 is a block diagram showing an example of a modification of the functional arrangement of the information receiving apparatus in FIG. 9.

[0061] The information receiving apparatus 200a receives the contents data 6 which are provided at the contents distributing service dealer 4 in FIG. 1 and have classes of predetermined value standards (type  $\alpha$  and  $\beta$ ). Further, in the type  $\alpha$  of the contents data 6 are provided the highest quality A, high quality B and medium quality C and in the type  $\beta$  are provided CD-DA data, ATRAC data for the minidisc (MD) and ATRAC2 data for the RAM.

[0062] The information receiving apparatus 200a comprises, for example, a recording apparatus 40, a digital signal processing 41, a D/A 42, a value standard selecting circuit 43 (information selecting means), a billing coping processing circuit 44 (information billing means), a display 56 and a key input unit 57.

[0063] The billing coping processing circuit 44 receives the billing information 41 in FIG. 10 from the contents distributing service dealer 4 in FIG. 1 and displays its contents in the display 56. The user selects the billed amount of money (in FIG. 10, in a case of the type  $\alpha$ , [300yen], [100yen], [50yen] and in a case of the type  $\beta$ , [200yen], [100yen], [100yen]) based on the respective value standards displayed in the display 56. The value standard selecting circuit 43 notifies the contents distributing service dealer 4 in FIG. 1 based on the selected value standard. The contents data 6 provided at the contents distributing service dealer 4 in FIG. 1 are recorded in the recording apparatus 40.

[0064] Digital signal processing 41 carries out signal

processing on the contents data 6 recorded by the recording apparatus 40 such as an error correcting process, an expansion process for the compressed data, and the like and the processed data is further D/A-converted by the D/A 42 to be, for example, audio-outputted.

[0065] According to the above-mentioned information receiving apparatus 200a, the billed amount of money is made different depending on the value standards of the contents data 6 obtained.

[0066] According to the embodiments of the present invention, in the information distributing apparatus 1, the contents processing unit 23 adds the header (contents classification C and the quality Q) to the contents data 6 as the standard for judging the value based on the pre-determined standards. The header added to the contents data 6 by the contents processing unit 23 is referred to at a time of billing the information distributed by the receiving and distributing unit 25. The contents processing 23 adds the billing information 41 to the contents data 6 based on the header. Therefore, the information distributing apparatus 1 has the contents distributing data 7 which have been processed into a plurality of quality from the same contents data 6 and can distribute the data 7 by having each of them carry the billing information 41 corresponding to each to the user 33 in FIG. 1.

[0067] Accordingly, based on the class and quality as the value standards of the provided information, it is possible to carry out the billing of the side to which the information is provided. That is, it is possible to obtain the contents data 6 which is billed in accordance with the quality and the like in response to the demand by the user himself. On the user 33 side, high quality information can be obtained at a high price and low quality information can be obtained at a low price. On the other hand, on the contents provider side, since the high quality information is not provided to the user 33 at a lower price, he can feel relieved from the standpoint of a copy right. On the contents provider side, a range of choices of the contents 6 can be expanded.

[0068] By the way, the present invention is not limited to the above-mentioned embodiments.

[0069] A form may also be good in which the information receiving apparatus 200 in FIG. 1 is disposed in, for example, shops and the like.

[0070] The contents classification C and the quality Q as the header of the contents distributing data 7 are illustrated as respectively being 4 bits in FIG. 7 (A), but it is all right to prepare necessary numbers of bits for respective necessary numbers of divisions. Also, the header may be omitted when provision of exclusively intended information about, for example, a specified kind of information on music or the like is carried out.

[0071] As explained up to now, according to the present invention, it is possible to provide the information distributing apparatus and the information distributing method, the information receiving apparatus and the

information receiving method as well as the information receiving and distributing method, which are capable of carrying out the billing of the side to which the information is provided based on the value standard of the provided information.

[0072] Having described preferred embodiments of the present invention with reference to the accompanying drawings, it is to be understood that the present invention is not limited to the above-mentioned embodiments and that various changes and modifications can be effected therein by one skilled in the art without departing from the spirit or scope of the present invention as defined in the appended claims.

#### Claims

1. In an information distributing apparatus for billing and distributing information,

an information distributing apparatus being characterized by comprising:  
an adding means for adding its value standard based on a predetermined standard,  
a billing means for carrying out billing based on said value standard of said information and  
a distributing means for distributing said information billed by said billing means.

2. An information distributing apparatus as claimed in claim 1 wherein said information is audio information or video information.

3. An information distributing apparatus as claimed in claim 1, wherein said value standard is a high or a low of a usage value distinguished by quality and class of said information.

4. An information distributing apparatus as claimed in claim 3 wherein said value standard for distinguishing the class of said information is a class of contents of said information.

5. An information distributing apparatus as claimed in claim 3 wherein said value standard for distinguishing the quality of said information is a transmission speed of said information distributed by said distributing means or, in a case of distributing by way of compression at a time of distribution, is a degree of the compression of said information.

6. An information distributing apparatus as claimed in 1, of said information, information added with a high value of said standard by said adding means is billed high by said billing means while information added with a low one is billed low.

7. An information distributing apparatus as claimed in claim 1 wherein the said distributing means distrib-

utes said information by using a communications satellite, radio communication, cable communication or the internet, or combination of them.

- 5 8. In an information distributing method for billing and distributing information,

an information distributing method being characterized by comprising the steps of:  
adding a value standard to said information by an adding means based on a predetermined standard,  
carrying out billing by a billing means based on said value standard, and  
distributing said information billed by said billing means by a distributing means.

9. A information distributing method as claimed in claim 8, wherein

said information is audio information or video information.

10. An information distributing method as claimed in claim 8 wherein said value standard is a high and a low of a usage value distinguished by quality and class of said information.

11. An information distributing method as claimed in claim 10 wherein said value standard to distinguish the quality and class of said information is a class of contents of said information.

12. An information distributing method as claimed in claim 10 wherein said value standard to distinguish the quality and class of said information is a transmission speed of said information distributed by said distributing means, or in a case of distributing by way of compression at a time of the distribution, is a degree of the compression of said information.

13. An information distributing method as claimed in claim 8 wherein, of said information, information added with a high value of said standard by said adding means is billed high by said billing means and information added with a low one is billed low.

14. An information distributing method as claimed in claim 8 wherein said distributing means distributes said information by using a communications satellite, radio communication, cable communication or the internet, or combination of them.

15. In an information receiving apparatus for receiving information,

an information receiving apparatus being characterized by comprising:

- a recording medium selecting means for selecting at least one information recording medium out of a plurality of information recording media for recording said information,
- a recording means for recording said information received in at least one information recording medium out of said information recording media selected by said recording media selecting means, and
- a billing coping means for carrying out billing of said information in accordance with said information recording medium in which said information has been recorded by said recording means.
16. In an information receiving method for receiving information,
- an information receiving method being characterized by comprising the step of:
- selecting at least one information recording medium out of a plurality of information recording media, recording the said information received therein, and carrying out billing of said information in accordance with said information recording medium in which said information has been recorded.
17. In an information receiving apparatus for receiving information,
- an information receiving apparatus being characterized by comprising
- an information selecting means for selecting information corresponding to at least one value standard out of information having a plurality of value standards, and
- an information billing means for selecting and receiving by said information selecting means and carrying out the billing in accordance with said information.
18. In an information receiving method for receiving information,
- an information receiving method being characterized by selecting and receiving said information corresponding to at least one value standard out of information having a plurality of value standards and carrying out the billing in accordance with said information selected.
19. In an information receiving and distributing method for billing and distributing information, and for receiving said information by an information receiving apparatus,
- an information receiving and distributing
- method being characterized by comprising the step of:
- receiving said information distributed by the distributing means by said information receiving apparatus and recording the same in an arbitrary information recording medium, and making said information receiving apparatus bill in accordance with said information recording medium.

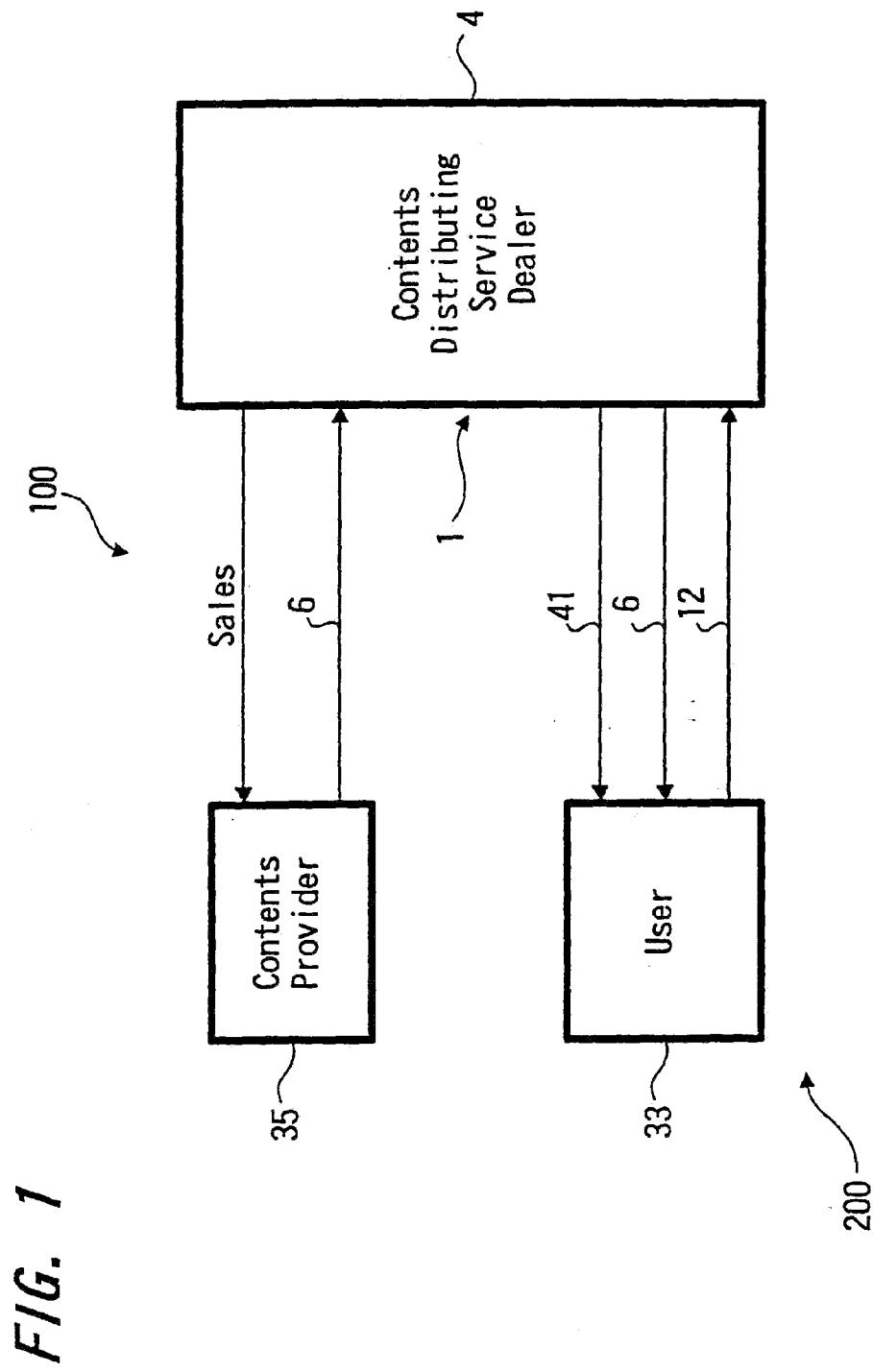


FIG. 2

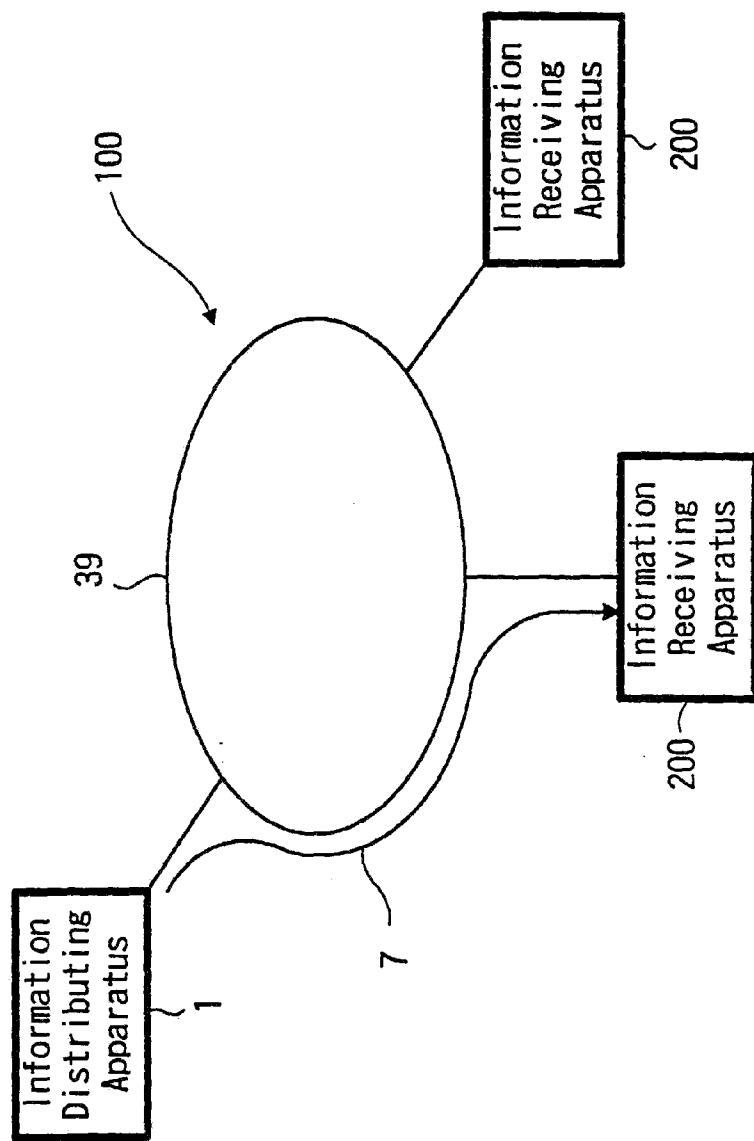


FIG. 3

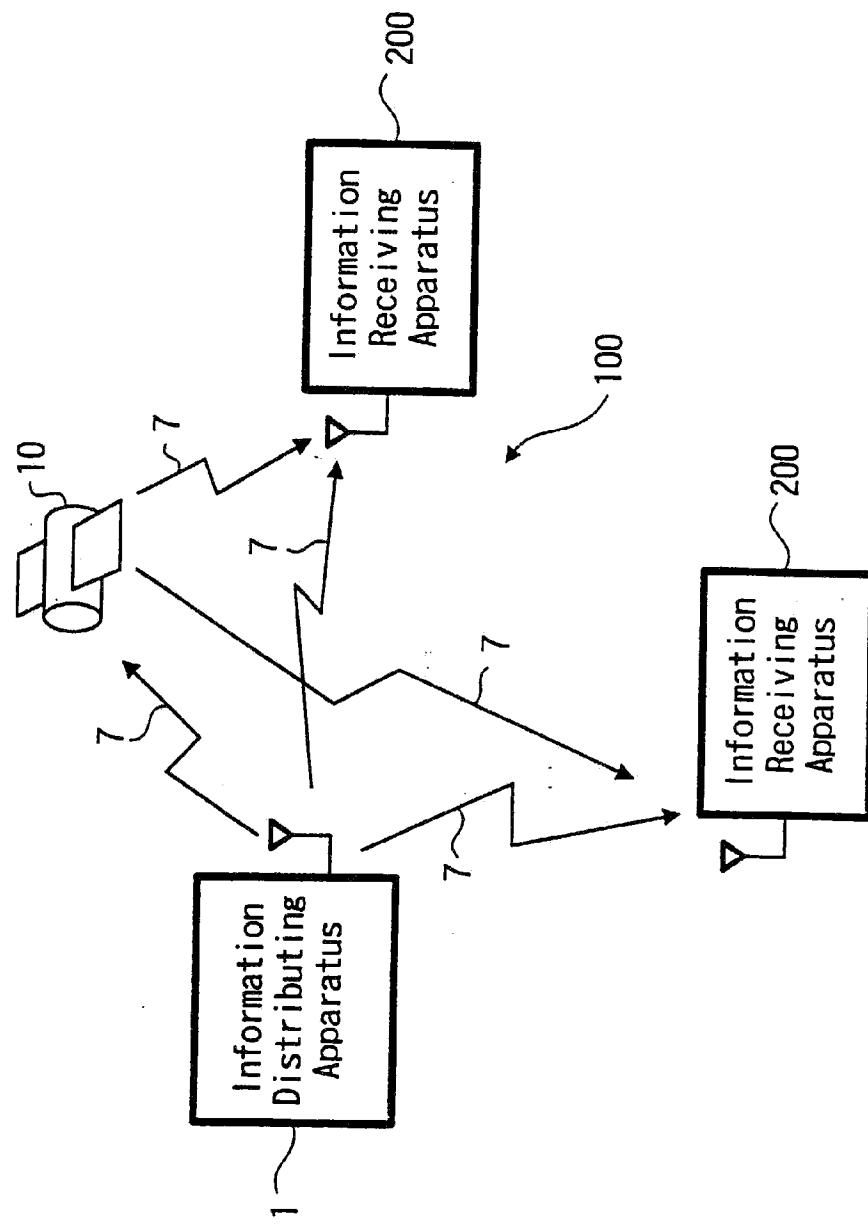


FIG. 4

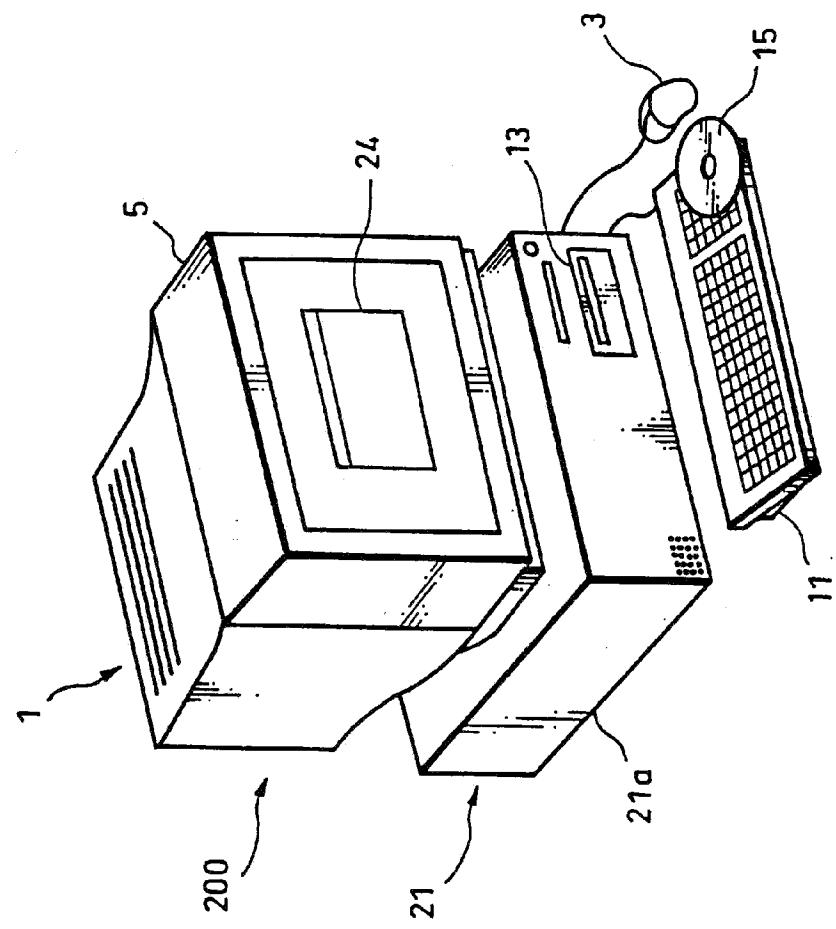


FIG. 5

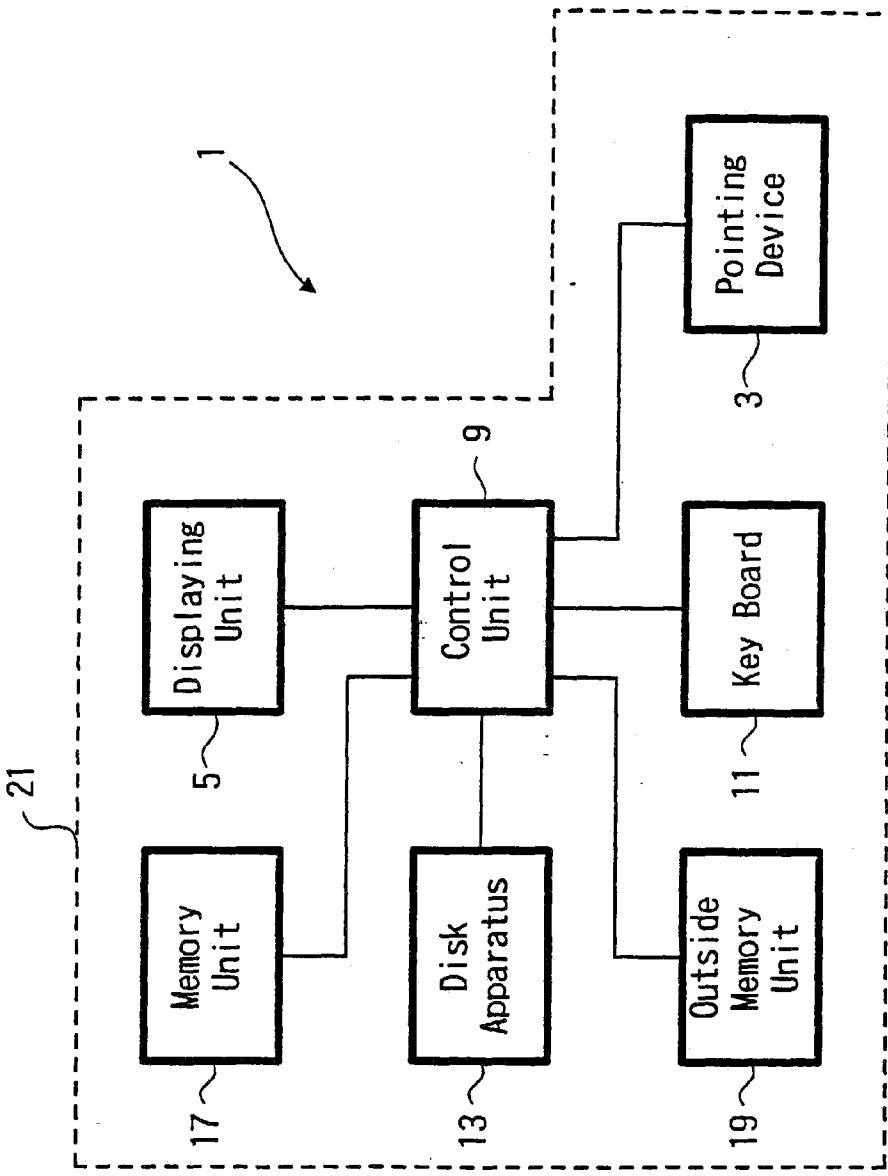


FIG. 6

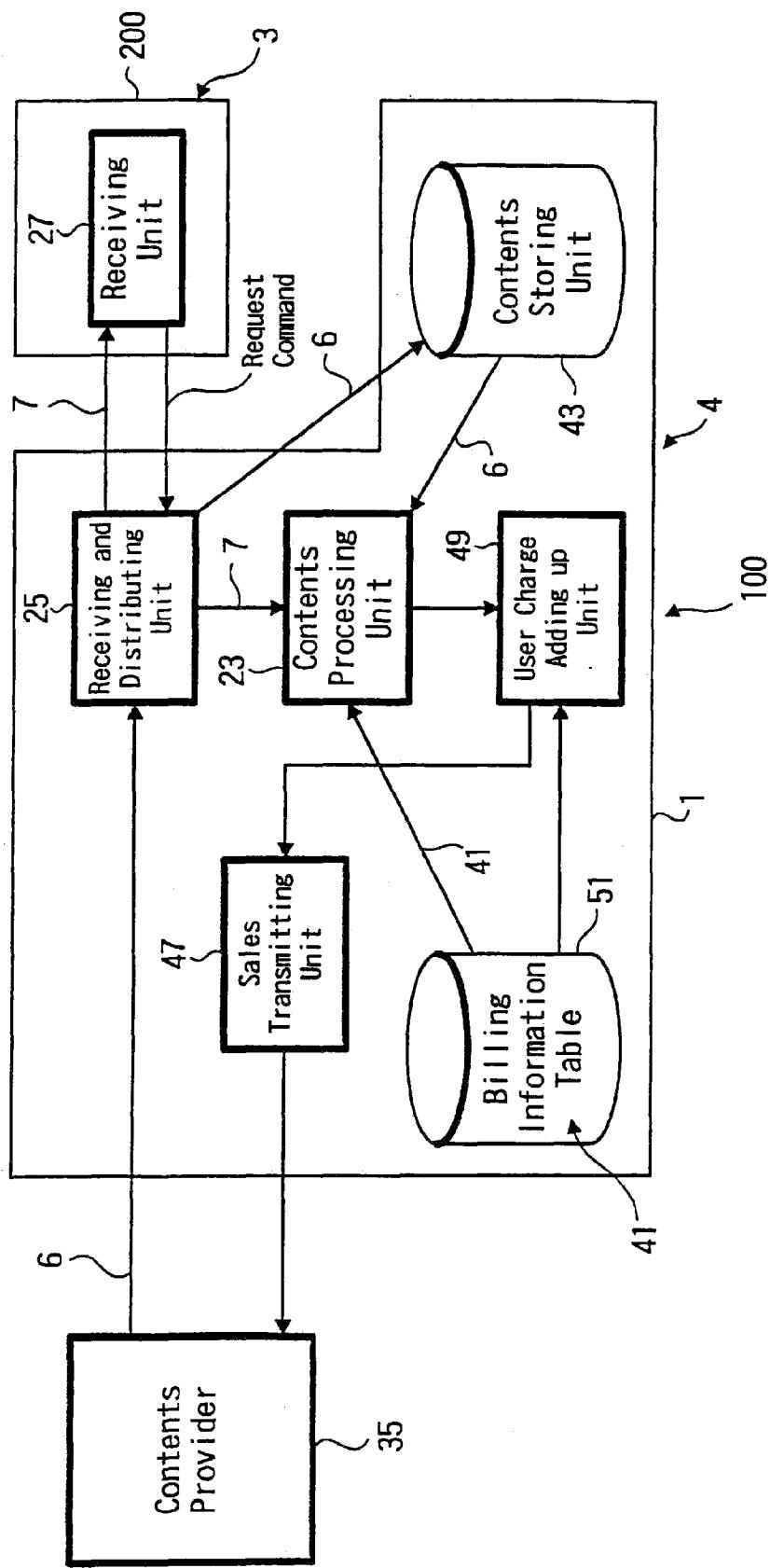


FIG. 7A

A Header		Classification		Quality	6	41		
Contents				Billing Information				
Contents Data								

FIG. 7B

Rank	Quality	Charge
High(0000)	No Compression	200yen
Middle(0001)	50% Compression	100yen
Low(0010)	10% Compression	40yen

FIG. 7C

Contents Classification Code	Classification
0000	Classic Music
0001	Popular
.....	.....
1000	Movie
1001	CG
1010	Still Picture

FIG. 8

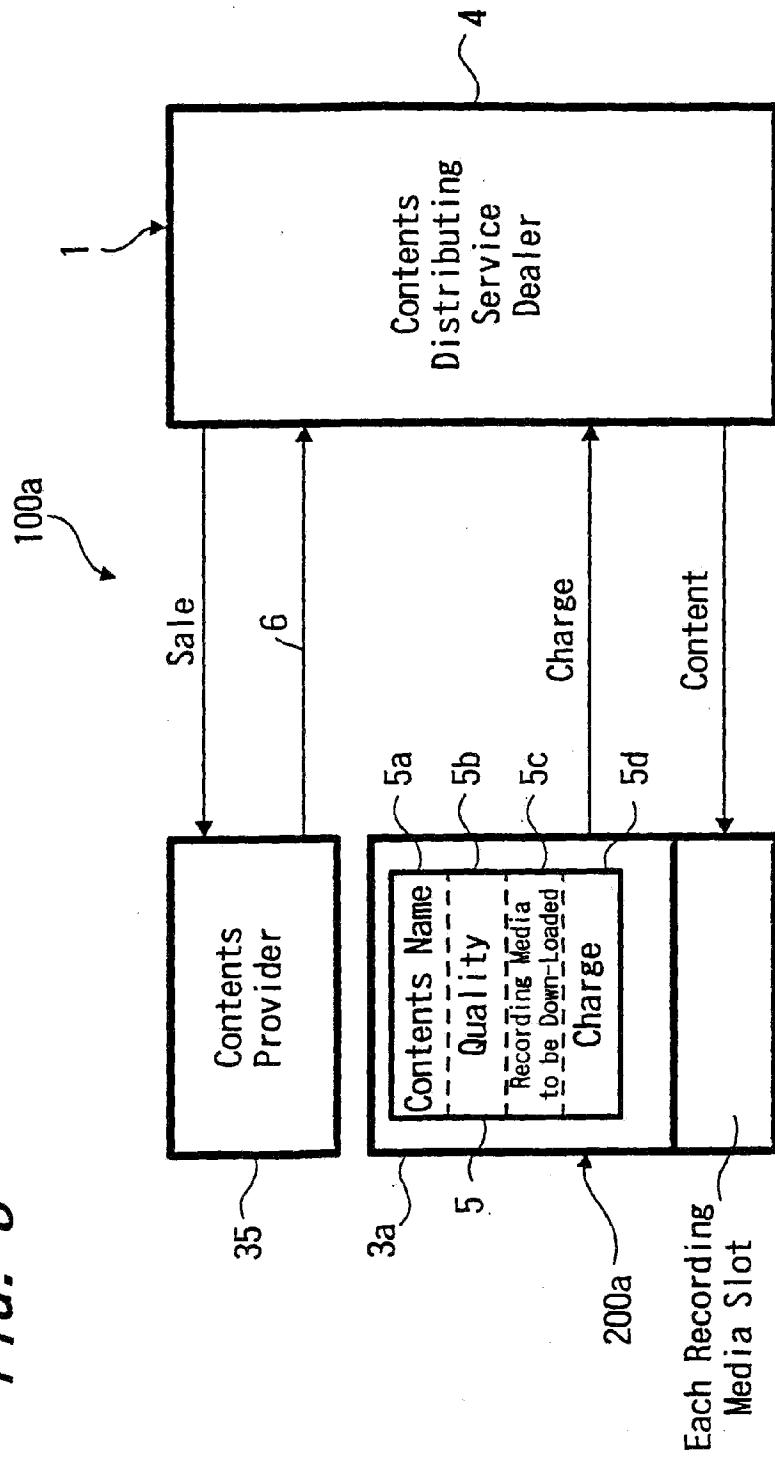


Fig. 9

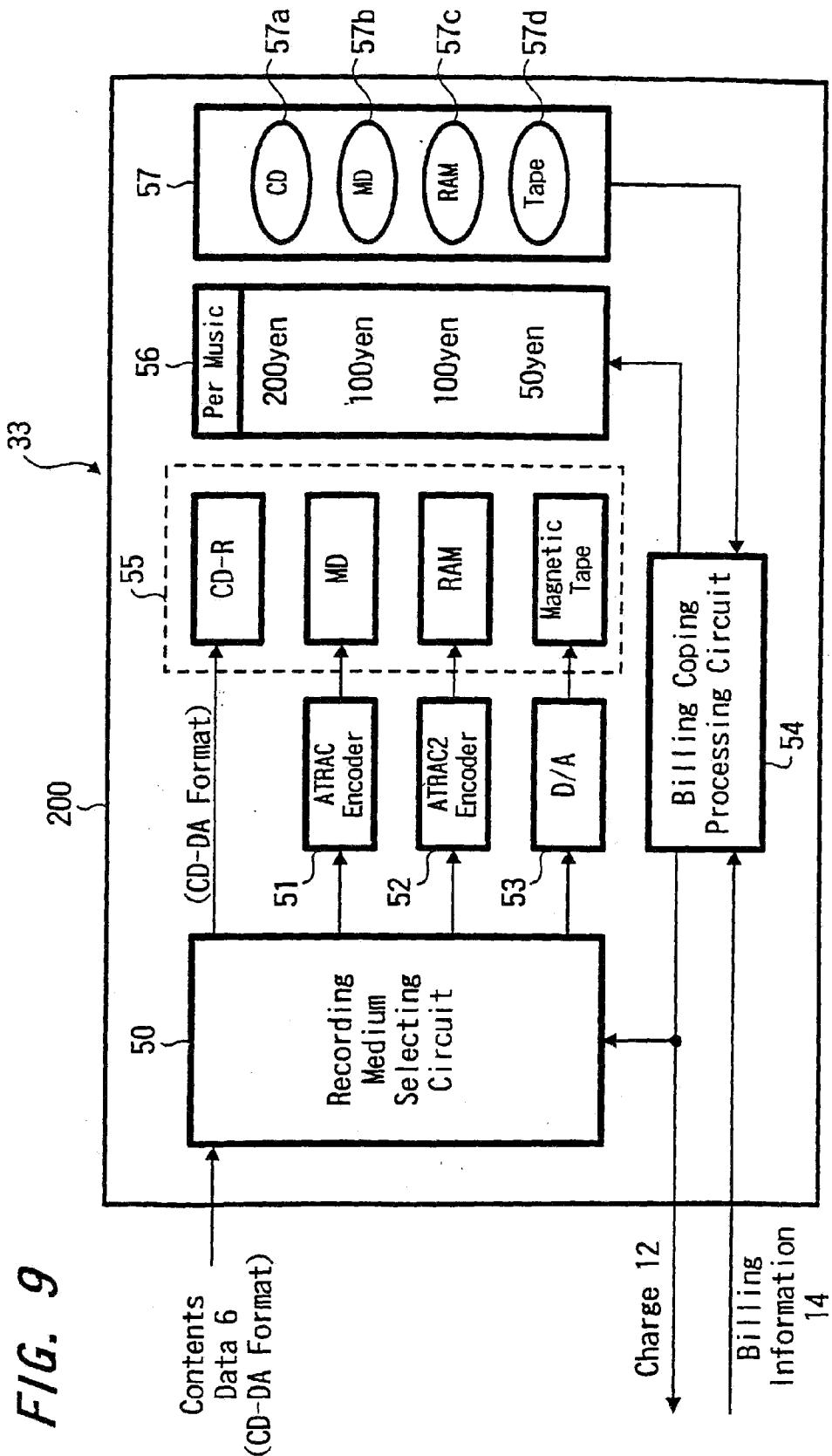
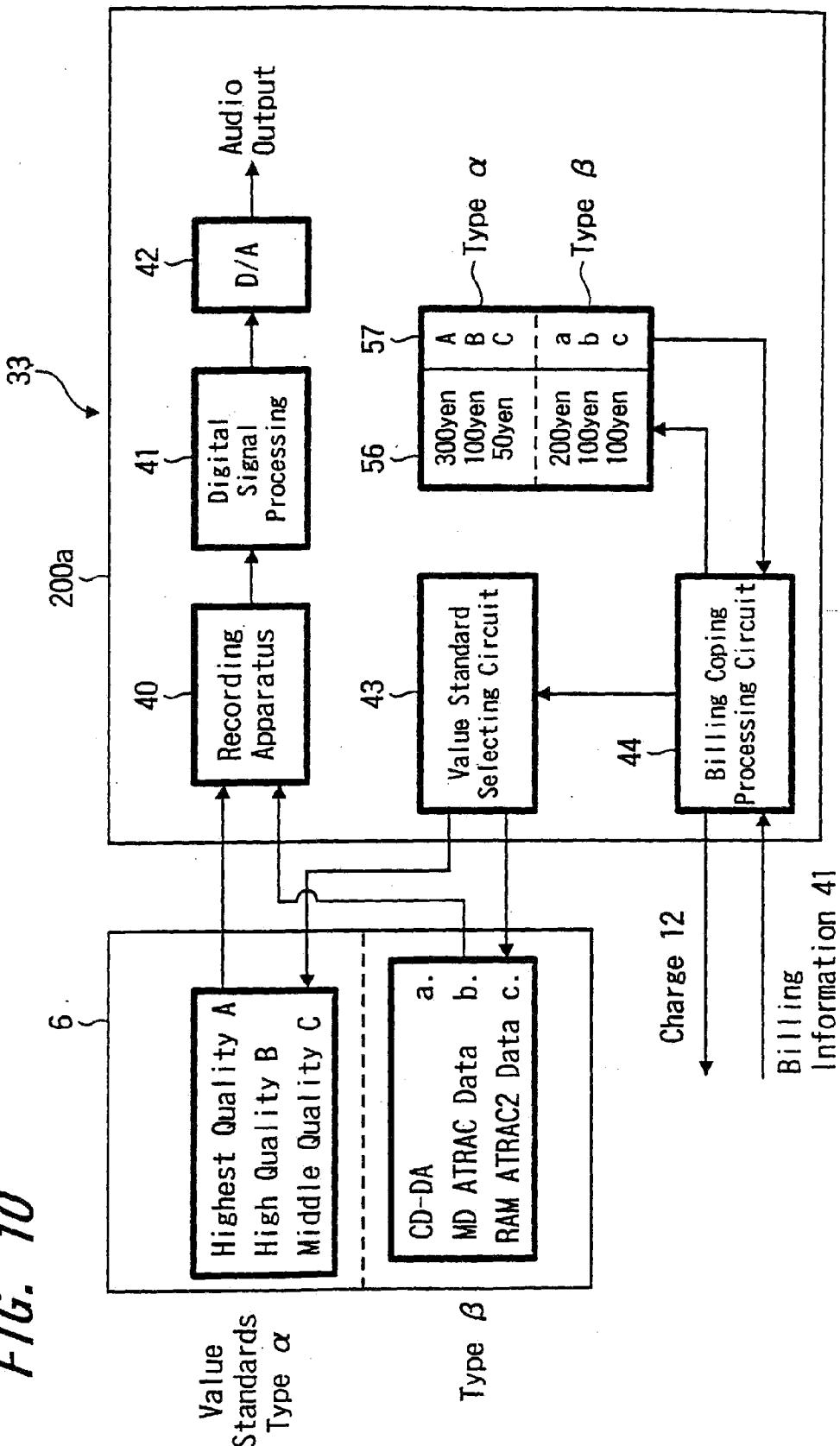


FIG. 10



(19)



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Office européen des brevets



(11)

EP 0 989 751 A3

(12)

## EUROPEAN PATENT APPLICATION

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**03.04.2002 Bulletin 2002/14**

(51) Int Cl.7: **H04N 7/173, G06F 17/60**

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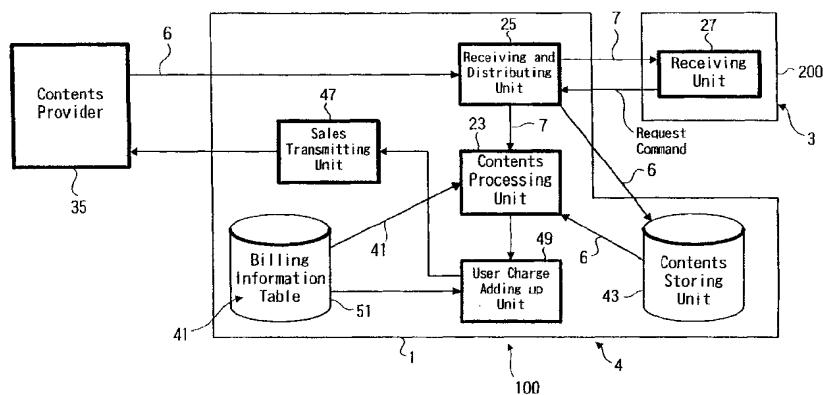
(74) Representative: **Müller . Hoffmann & Partner Patentanwälte**  
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(54) **Information distributing apparatus and information distributing method, information receiving apparatus and information receiving method as well as information receiving and distributing method**

(57) An information distributing apparatus for billing and distributing information is comprised of an adding means for adding a value standard to the above-mentioned information based on a predetermined standard, a billing means for carrying out billing based on the above-mentioned value standard of the above-mentioned information and a distributing means for distributing the above-mentioned information billed by the

above-mentioned billing means 23, whereby an information distributing apparatus and an information distributing method, an information receiving apparatus and an information receiving method as well as an information receiving and distributing method, which are capable of carrying out billing of a side to which information are provided based on a value standard of the provided information, are provided.

FIG. 6





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Office

## EUROPEAN SEARCH REPORT

Application Number  
EP 99 11 8613

DOCUMENTS CONSIDERED TO BE RELEVANT			CLASSIFICATION OF THE APPLICATION (Int.Cl.7)
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	H04N7/173 G06F17/60
X	EP 0 766 475 A (AT & T CORP) 2 April 1997 (1997-04-02)	1,2,4, 6-9,11, 13,14	H04N7/173 G06F17/60
Y	* abstract *  * figures 1,3 * * column 3, line 5 - line 21 * * column 4, line 13 - column 5, line 8 * * column 9, line 39 - line 53 * * column 12, line 25 - line 47 * * claims 1,3-5 * ---	3,5,10, 12	H04N7/173 G06F17/60
X	WO 96 12256 A (MASTRONARDI TONY ;NATHAN GUY (FR); TECHNICAL MAINTENANCE CORP (US)) 25 April 1996 (1996-04-25)	17,18	H04N7/173 G06F17/60
Y	* figures 1-3 *  * page 13, line 1 - line 2 * * page 16, line 35 - page 17, line 20 * * page 18, line 28 - line 35 * * page 19, line 5 - line 19 * * claims 1,2 *	3,5,10, 12	TECHNICAL FIELDS SEARCHED (Int.Cl.7)
Y	EP 0 696 121 A (AT & T CORP) 7 February 1996 (1996-02-07)	3,5,10, 12	H04N G06F
A	* figure 1 *	1,2,4, 6-9,11, 13,14, 17,18	H04N G06F
	* abstract * * column 5, line 7 - column 6, line 55 * * claims 1,2,4,8,12,15 *	---	H04N G06F
		-/-	H04N G06F
The present search report has been drawn up for all claims			H04N G06F
Place of search		Date of completion of the search	Examiner
THE HAGUE		4 February 2002	Dobbelaere, D
CATEGORY OF CITED DOCUMENTS			
X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document			
T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document			



European Patent  
Office

Application Number  
EP 99 11 8613

### CLAIMS INCURRING FEES

The present European patent application comprised at the time of filing more than ten claims.

- Only part of the claims have been paid within the prescribed time limit. The present European search report has been drawn up for the first ten claims and for those claims for which claims fees have been paid, namely claim(s):
  
- No claims fees have been paid within the prescribed time limit. The present European search report has been drawn up for the first ten claims.

### LACK OF UNITY OF INVENTION

The Search Division considers that the present European patent application does not comply with the requirements of unity of invention and relates to several inventions or groups of inventions, namely:

see sheet B

- All further search fees have been paid within the fixed time limit. The present European search report has been drawn up for all claims.
  
- As all searchable claims could be searched without effort justifying an additional fee, the Search Division did not invite payment of any additional fee.
  
- Only part of the further search fees have been paid within the fixed time limit. The present European search report has been drawn up for those parts of the European patent application which relate to the inventions in respect of which search fees have been paid, namely claims:

1-14, 17, 18

- None of the further search fees have been paid within the fixed time limit. The present European search report has been drawn up for those parts of the European patent application which relate to the invention first mentioned in the claims, namely claims:



European Patent  
Office

## EUROPEAN SEARCH REPORT

Application Number  
EP 99 11 8613

DOCUMENTS CONSIDERED TO BE RELEVANT			CLASSIFICATION OF THE APPLICATION (Int.Cl.7)
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.7)
A	FR 2 760 584 A (DAURY PHILIPPE) 11 September 1998 (1998-09-11) * figure 1 * * page 2, line 32 - line 35 * * page 3, line 24 - line 28 * * claims 1,2,4,6 * ---	1-14,17, 18	
A	WO 97 29584 A (HYVOENEN MIKA ;MELEN BJOERN (FI); ERICSSON TELEFON AB L M (SE)) 14 August 1997 (1997-08-14) * figure 2 * * page 7, line 13 - line 16 * * page 11, line 32 - page 12, line 11 * ---	1-14,17, 18	
A	EP 0 715 243 A (XEROX CORP) 5 June 1996 (1996-06-05) * figures 1-3 * * page 6, line 37 - page 7, line 21 * * page 10, line 25 - page 15, line 18 * * page 17, line 28 - page 19, line 14 * * page 20, line 28 - page 25, line 25 * ---	1-14,17, 18	
A	PATENT ABSTRACTS OF JAPAN vol. 014, no. 561 (P-1142), 13 December 1990 (1990-12-13) & JP 02 240710 A (NEC CORP), 25 September 1990 (1990-09-25) * abstract *---	3-5, 10-12	
A	US 4 484 217 A (BLOCK ROBERT S ET AL) 20 November 1984 (1984-11-20) * figure 3 * * column 2, line 58 - column 3, line 12 * * column 6, line 15 - line 20 * * column 7, line 20 - line 28 * * column 8, line 49 - line 55 * * column 13, line 62 - line 68 * -----	17,18	
The present search report has been drawn up for all claims			
Place of search		Date of completion of the search	Examiner
THE HAGUE		4 February 2002	Dobbelaere, D
CATEGORY OF CITED DOCUMENTS			
X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document			
T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document			



European Patent  
Office

**LACK OF UNITY OF INVENTION  
SHEET B**

Application Number  
EP 99 11 8613

The Search Division considers that the present European patent application does not comply with the requirements of unity of invention and relates to several inventions or groups of inventions, namely:

1. Claims: 1-14

Information distributing apparatus/method, including billing

2. Claims: 15,16,19

Information Receiving apparatus/method, including recording of received information

3. Claims: 17,18

Information Receiving apparatus/method for selecting information based on its value standard

**ANNEX TO THE EUROPEAN SEARCH REPORT  
ON EUROPEAN PATENT APPLICATION NO.**

EP 99 11 8613

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report. The members are as contained in the European Patent Office EDP file on. The European Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

04-02-2002

Patent document cited in search report		Publication date		Patent family member(s)	Publication date
EP 0766475	A	02-04-1997	US CA EP JP SG	5701152 A 2184303 A1 0766475 A1 9139929 A 43417 A1	23-12-1997 29-03-1997 02-04-1997 27-05-1997 17-10-1997
WO 9612256	A	25-04-1996	WO AT AT AT AT AT AT AT CA CA CA CA CA CA CA CA DE DE DE DE DE DE DE DE DE DE DE DE DE DE DE DE DK DK DK DK DK DK EP EP EP EP EP EP EP EP ES	9612255 A1 188793 T 176827 T 176540 T 188794 T 176541 T 168803 T 2201911 A1 2201913 A1 2201914 A1 2201915 A1 2201916 A1 2201917 A1 69422647 D1 69422647 T2 69503650 D1 69503650 T2 69507706 D1 69507706 T2 69507723 D1 69507723 T2 69507893 D1 69507893 T2 69514536 D1 69514536 T2 786121 T3 786122 T3 786123 T3 786125 T3 803110 T3 786126 T3 0786121 A1 0786122 A1 0786123 A1 0786124 A1 0786125 A1 0803110 A1 0786126 A1 0927977 A2 2143556 T3	25-04-1996 15-01-2000 15-03-1999 15-02-1999 15-01-2000 15-02-1999 15-08-1998 25-04-1996 25-04-1996 25-04-1996 25-04-1996 25-04-1996 25-04-1996 17-02-2000 31-08-2000 27-08-1998 04-02-1999 18-03-1999 01-07-1999 18-03-1999 01-07-1999 25-03-1999 29-06-2000 17-02-2000 21-06-2000 03-07-2000 20-09-1999 20-09-1999 03-07-2000 20-09-1999 26-04-1999 30-07-1997 30-07-1997 30-07-1997 30-07-1997 30-07-1997 29-10-1997 30-07-1997 07-07-1999 16-05-2000

**ANNEX TO THE EUROPEAN SEARCH REPORT  
ON EUROPEAN PATENT APPLICATION NO.**

EP 99 11 8613

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report. The members are as contained in the European Patent Office EDP file on. The European Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

04-02-2002

Patent document cited in search report		Publication date		Patent family member(s)	Publication date
WO 9612256	A			ES 2129229 T3 ES 2129230 T3 ES 2144144 T3 ES 2129231 T3 ES 2122683 T3 WO 9612256 A1 WO 9612257 A1 WO 9612258 A1 WO 9612259 A1 WO 9612260 A1	01-06-1999 01-06-1999 01-06-2000 01-06-1999 16-12-1998 25-04-1996 25-04-1996 25-04-1996 25-04-1996 25-04-1996
EP 0696121	A	07-02-1996		US 6041316 A CA 2150058 A1 EP 0696121 A1 JP 8095915 A	21-03-2000 26-01-1996 07-02-1996 12-04-1996
FR 2760584	A	11-09-1998	FR	2760584 A1	11-09-1998
WO 9729584	A	14-08-1997		FI 960619 A AU 719635 B2 AU 1726497 A BR 9707396 A CN 1210645 A EP 0873645 A1 WO 9729584 A1 NO 983561 A PL 328409 A1 TR 9801509 T2 US 5956391 A	10-08-1997 11-05-2000 28-08-1997 06-04-1999 10-03-1999 28-10-1998 14-08-1997 09-10-1998 18-01-1999 23-11-1998 21-09-1999
EP 0715243	A	05-06-1996		US 5634012 A EP 0715243 A1 JP 8272746 A	27-05-1997 05-06-1996 18-10-1996
JP 02240710	A	25-09-1990	NONE		
US 4484217	A	20-11-1984		AT 49333 T AU 596514 B2 AU 1449588 A AU 572786 B2 AU 1703283 A BR 8307352 A CA 1216056 A1 DE 3381078 D1 DK 8484 A EP 0108143 A1	15-01-1990 03-05-1990 07-07-1988 19-05-1988 02-12-1983 17-04-1984 30-12-1986 08-02-1990 09-01-1984 16-05-1984

**ANNEX TO THE EUROPEAN SEARCH REPORT  
ON EUROPEAN PATENT APPLICATION NO.**

EP 99 11 8613

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report.  
 The members are as contained in the European Patent Office EDP file on  
 The European Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

04-02-2002

Patent document cited in search report	Publication date		Patent family member(s)	Publication date
US 4484217 A		FI	840094 A ,B,	11-01-1984
		JP	2744168 B2	28-04-1998
		JP	5145919 A	11-06-1993
		JP	7028405 B	29-03-1995
		NO	840077 A	10-01-1984
		NO	164809 B	06-08-1990
		WO	8304154 A1	24-11-1983